

# FAHMIDA AKTER RASHA

Lubbock, TX

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## Summary

- Cell and molecular biologist with 3.5 years years' laboratory experience in obesity and breast cancer research, and 1 year clinical experience in type II diabetes research leading to 5 publications involving human and mammalian cell culture models.
- Professional teaching/mentoring experience of 3 years (undergraduate level).
- Project, personnel and resource management, scientific protocol development, collaboration, and coordination with fast learning ability.
- Effective scientific communicator, capable of verbalizing scientific concepts, evidenced by 6 presentations in local and national conferences.

## Education

PhD Candidate	[December 2019]
Nutritional Sciences, Texas Tech University, Lubbock, Texas	
MS and BS	[2013, 2012]
Nutrition and Food Sciences, University of Dhaka	

## Work Experience

### **Renin-Angiotensin System | Adipocytes | Breast Cancer | Cell-based Assays** [2016-continuing]

As Research Assistant in Dr. Naima Moustaid-Moussa's Lab at Texas Tech University

- Characterized multiple *in-vitro* properties of the adipocyte renin-angiotensin system in breast cancer and obesity interactions leading to 2 original manuscripts and 3 poster presentations.
- Optimized and performed multiple innovative scientific procedures to determine the effects of omega-3-polyunsaturated fatty acids in obesity and breast cancer crosstalk using *in-vitro* conditioned medium experiments resulting in 1 original manuscript and 1 national-level poster presentation.
- Conducted an extensive literature review on Renin-Angiotensin System's mechanistic interaction with obesity and its associated breast cancer resulted in 1 publication, filling a significant research gap of past 6 years literatures.
- Collaborated in retrospective-exploratory research with Texas Tech Health Science Center and Mechanical Engineering Department on angiotensin II inhibitor (ACEi) effect on breast cancer patients with obesity leading to 1 publication.

**Type II Diabetes | Molecular Biology | Clinical Data Handling**

[Jan, 2013 -Dec, 2015]

As Research Assistant at University of Dhaka, Bangladesh

- Designed and spearheaded project on prevalence of IRS1 gene polymorphism in Type II diabetic patients of Dhaka city.
- Involved in project planning, managing resources, sample and questionnaire design.
- Actively involved and collaborated with Genetic Engineering Department for clinical sample (blood) handling, DNA extraction, qPCR, sequencing.
- Presented analyzed results in reports and academic presentations.

**Teaching | Mentoring | Undergraduate Training**

[Aug, 2016 -Dec, 2019]

As Graduate Research/Teaching Assistant/Part-time Instructor at Texas Tech University

- Assisted faculties in both introductory and advanced graduate level courses; for instance, Carbohydrates, proteins, and lipids (NS 5370); Vitamins and minerals (NS 5365); Advanced research methods (NS 6350); Nutrition and chronic diseases (NS 6340).
- Involved in content preparation, grading, proctoring, and communicating with students.
- Taught Undergraduate Food Preparation Lab (NS 2310) focusing on basic food preparation principles and techniques to minimize nutrient loss.
- Trained undergraduate research assistant on basic lab safety, mammalian cell culture, cell-based molecular assays, report writing, as well as guided via regular week meetings followed by their active participation and presentation in national scientific conference.

**Techniques, Software & Instrumentation**

Project Management	Cell Growth Analyzer	SDS-PAGE, Western Blotting
Resource Management	Sterile/ Aseptic Techniques	Protein, DNA/RNA Extraction
Networking, Communication	Mammalian Cell Culture	Microscopy
Data Analysis	Cell Signaling	ELISA
R, SPSS, GraphPad Prism	Scratch Assay	Immunohistochemistry
Microsoft Office	MTT Assay	Immunofluorescence
Image J, Adipo-analyzer	PCR, RT-PCR, qRT-PCR	

## Publications

1. **Rasha, F**, Ramalingam, L, Gollahon, L, Rahman, R, Rahman, S, Menikdiwela, K, and Moustaid-Moussa, N (2019). Mechanisms linking the renin-angiotensin system, obesity, and breast cancer. **Endocrine-Related Cancer** 26, 12, R653-R672, available from: <https://doi.org/10.1530/ERC-19-0314>.
2. Al-Jawadi A\*, **Rasha F\***, Ramalingam L, Alhaj S, Moussa H, Gollahon L, Dharmawardhane S, Moustaid-Moussa N (2019). Protective Effects of Eicosapentaenoic Acid in Adipocyte-Breast Cancer Cell Cross Talk. **The Journal of Nutritional Biochemistry, In-press**, Available from: <https://doi.org/10.1016/j.jnutbio.2019.108244>. (**\*Co-first author**)
3. **Rasha F**, Ramalingam L, Moussa H, Menikdiwela KR, Hernandez A, Gollahon L, Rahman RL, Moustaid-Moussa N (2019). Renin-Angiotensin System Inhibition Attenuates Adipocyte-Breast Cancer Cell Interactions. **Experimental Cell Research, Under review**.
4. **Rasha F**, Ramalingam L, Kahathuduwa C, Moussa H, Rahman RL, Moustaid-Moussa N (2019). Association between Body Mass Index and ACEi Use in a Convenient Sample of Breast Cancer Patients. (Manuscript under preparation).
5. **Rasha F**, Kahathuduwa C, Ramalingam L, Hernandez A, Moussa H, Moustaid-Moussa N (2019). Combined effects of Adipocyte-RAS Inhibition and Eicosapentaenoic acid in Breast Cancer Cell Inflammation. **Cancers, Under review**.
6. Menikdiwela KR, Ramalingam L, **Rasha F**, Wang S, Dufour JM, Kalupahana NS, Sunahara KS, Martin JO, Moustaid-Moussa N (2019). Autophagy in Metabolic Syndrome: Breaking the wheel by targeting the Renin Angiotensin System. **Cell Death and Disease, Under review**.

## Abstracts and Conference Presentations

1. **Rasha F**, Ramalingam L, Menikdiwela K, Moussa H, and Moustaid-Moussa N. "Role of Adipose-Renin-Angiotensin System Inhibition in Obesity and Breast Cancer Crosstalk". 2019 Obesity Meeting, The Obesity Society (TOS), Las Vegas NV, November 2019.
2. **Rasha F**, AL-Jawadi A, Ramalingam L, Moussa H, Gollahon L, and Moustaid-Moussa N. "Protective Anti-inflammatory Effect of Eicosapentaenoic acid (EPA) in Obesity and Breast Cancer Crosstalk". American Institute for Cancer Research (AICR) 2019 Research Conference, Chapel Hill NC, May 2019.
3. **Rasha F**, Ramalingam L, Menikdiwela K, Moustaid-Moussa N. "Role of adipose renin-angiotensin system (RAS) in breast cancer cell inflammation". Nutrition 2018 Conference by American Society for Nutrition (ASN), Boston MA, June 2018. Current Development in Nutrition (vol. 2, issue 11, P07-033).

4. Hernandez A, **Rasha F**, Ramalingam L, Menikdiwela K, Moustaid-Moussa N. "Role of adipose-derived hypertensive hormone angiotensin II in breast cancer cell metabolism". National Undergraduate Conference 2019 (NCUR), Atlanta GA, April 2019.
5. **Rasha F**, Ramalingam L, Moustaid-Moussa N. "Role of angiotensin II in breast cancer cell inflammation". 4<sup>th</sup> Annual meeting of Obesity Research Cluster (ORC) Poster Competition, May 2018.
6. **Rasha F**, Ramalingam L, Koboziyev I, Moustaid-Moussa N. "Role of fat cell derived hormones in obesity-linked breast cancer". 16<sup>th</sup> Annual TTU Graduate Students Poster Competition, March 2017.

## Awards

1. TTU Summer Dissertation Thesis Award, Summer 2019
2. TTU Study Abroad Competitive Scholarship (SACS), 2018-2019
3. TTU Graduate Student Research Support Award, Fall 2018
4. TTU Study Abroad Competitive Scholarship (SACS), 2017-2018
5. TTU Margaret Chan Carter Health Sciences Scholarship, 2017-2018
6. TTU Nutritional Science Gen Human Science Scholarship, 2016-2017

## Affiliations

Member, The Obesity Society (2019-continuing)

Member, The American Institute for Cancer Research (AICR) (2019-continuing)

Member, The American Society for Nutrition (2017-continuing)

Member and Fundraising Volunteer, Texas Tech University Graduate Nutrition Organization (GNO) (2016-continuing)

Member, Texas Tech University Obesity Research Institute (ORI) (2016-continuing)